

Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-143 (Cancelled)

144 (Currently Amended). A method of identifying and producing a peptide ~~which~~ that interacts with a ligand ~~which~~ that interacts with a discontinuous epitope of a single biological unit consisting of a protein, or consisting of two or more proteins ~~which~~ that interact to form a complex, the method comprising:

- (a) providing a plurality of DNA fragments consisting of fragments, each of which appears in a DNA sequence that encodes the single biological unit;
- (b) creating a library consisting of oligonucleotides from said plurality of DNA fragments, each said oligonucleotide comprising at least two of said fragments, said fragments being randomly ligated such that any oligonucleotide in the library can ligate with any other oligonucleotide in the library;

- (c) inserting each of said oligonucleotides from said library of oligonucleotides into an expression system;
- (d) causing the peptides encoded by said oligonucleotides to be expressed;
- (e) screening the expressed peptides for interaction with a ligand that interacts with a discontinuous epitope of said single biological unit;
- (f) identifying any peptide which so interacts; and
- (g) producing any peptide so identified.

145 (Previously Presented). A method in accordance with claim 144, wherein said procedure of (a) comprises cutting said DNA sequence to form said plurality of DNA fragments.

146 (Previously Presented). A method in accordance with claim 145, wherein said cutting is accomplished enzymatically.

147 (Previously Presented). A method in accordance with claim 145, wherein said cutting is accomplished mechanically.

148 (Previously Presented). A method in accordance with claim 144, wherein said procedure of (a) comprises synthesizing said plurality of DNA fragments.

149 (Currently Amended). A method in accordance with claim 144, wherein said procedure of (b) comprises randomly ligating said plurality of DNA fragments to one another to form at least one ligated fragment and at least partially digesting said at least one ligated fragment to form said library of oligonucleotides.

150 (Currently Amended). A method in accordance with claim 144, wherein said expression system comprises a plurality of bacteria and said procedure of (c) comprises inserting one ~~of~~ oligonucleotide from said library of oligonucleotides into each of said plurality of bacteria.

151 (Currently Amended). A method in accordance with claim 144, wherein said expression system comprises a plurality of phages and said procedure of (c) comprises inserting one ~~of~~ oligonucleotide from said library of oligonucleotides into each of said plurality of phages.

152 (Previously Presented). A method in accordance with claim 151, wherein said oligonucleotides are inserted into said phages by cloning said oligonucleotides into phage genes coding for a coat protein.

153 (Previously Presented). A method in accordance with claim 152, wherein said phages are filamentous phages and said coat protein is pIII or pVIII.

154 (Previously Presented). A method in accordance with claim 144, wherein said expression system comprises an eukaryotic expression system and said procedure of (c) comprises inserting said library of oligonucleotides into eukaryotic expression vectors and inserting said vectors into said eukaryotic expression system.

155 (Previously Presented). A method in accordance with claim 144, wherein said single biological unit is a protein.

156 (Previously Presented). A method in accordance with claim 144, wherein said single biological unit is two or more proteins which interact to form a complex.

157-158 (Cancelled).

159 (Currently Amended). A method of preparing a library of peptides ~~which~~ that can be screened to find peptides that interact with ligands ~~which~~ that interact with discontinuous epitopes of a single biological unit consisting of a protein, or consisting of two or more proteins ~~which~~ that interact to form a complex, comprising:

- (a) providing a plurality of DNA fragments consisting of fragments, each of which appears in a DNA sequence that encodes the single biological unit;

- (b) creating a library consisting of
oligonucleotides from said plurality of DNA
fragments, each said oligonucleotide comprising
at least two of said fragments, said fragments
being randomly ligated such that any
oligonucleotide in the library can ligate with
any other oligonucleotide in the library;
- (c) inserting each of said oligonucleotides from
said library of oligonucleotides into an
expression system; and
- (d) causing the peptides encoded by said
oligonucleotides to be expressed, thereby
preparing a library of peptides.

160 (Previously Presented). A method in accordance
with claim 159, wherein said procedure of (a) comprises
cutting said DNA sequence to form said plurality of DNA
fragments.

161 (Previously Presented). A method in accordance
with claim 160, wherein said cutting is accomplished
enzymatically.

162 (Previously Presented). A method in accordance
with claim 160, wherein said cutting is accomplished
mechanically.

163 (Currently Amended). A method in accordance with claim 159, wherein said procedure of (b) comprises randomly ligating said plurality of DNA fragments to one another to form at least one ligated fragment and at least partially digesting said at least one ligated fragment to form said library of oligonucleotides.

164 (Currently Amended). A method in accordance with claim 159, wherein said expression system comprises a plurality of ~~ef-~~ oligonucleotide from bacteria and said procedure of (c) comprises inserting one of said library of oligonucleotides into each of said plurality of bacteria.

165 (Currently Amended). A method in accordance with claim 159, wherein said expression system comprises a plurality of phages and said procedure of (c) comprises inserting one ~~ef-~~ oligonucleotide from said library of oligonucleotides into each of said plurality of phages.

166 (Previously Presented). A method in accordance with claim 165, wherein said oligonucleotides are inserted into said phages by cloning said oligonucleotides into phage genes coding for a coat protein.

167 (Previously Presented). A method in accordance with claim 166, wherein said phages are filamentous phages and said coat protein is pIII or pVIII.

168 (Previously Presented). A method in accordance with claim 159, wherein said expression system comprises an eukaryotic expression system and said procedure of (c) comprises inserting said library of oligonucleotides into eukaryotic expression vectors and inserting said vectors into said eukaryotic expression system.

169 (Previously Presented). A method in accordance with claim 159, wherein said single biological unit is a protein.

170 (Previously Presented). A method in accordance with claim 159, wherein said single biological unit is two or more proteins which interact to form a complex.

171-176 (Cancelled).

177 (Previously Presented). A method in accordance with claim 144, wherein each of said DNA fragments of (a) has a size of about 50 to about 150 base pairs.

178 (Cancelled).

179 (Previously Presented). A method in accordance with claim 159, wherein each of said DNA fragments of (a) has a size of about 50 to about 150 base pairs.

180-182 (Cancelled).

183 (New). A method of identifying and producing a peptide that interacts with a ligand that interacts with a discontinuous epitope of a single biological unit consisting

of a protein, or consisting of two or more proteins that interact to form a complex, the method comprising:

- (a) providing a plurality of DNA fragments consisting of fragments, each of which appears in a DNA sequence that encodes the single biological unit;
- (b) creating a library consisting of oligonucleotides from said plurality of DNA fragments, each said oligonucleotide comprising at least two of said fragments, said fragments being randomly ligated;
- (c) inserting each of said oligonucleotides from said library of oligonucleotides into an expression system;
- (d) causing the peptides encoded by said oligonucleotides to be expressed;
- (e) screening the expressed peptides, none of which are the single biological unit, for interaction with a ligand that interacts with a discontinuous epitope of said single biological unit;
- (f) identifying any peptide which so interacts; and
- (g) producing any peptide so identified.

184 (New). A method of identifying and producing a peptide that interacts with a ligand that interacts with a discontinuous epitope of a single biological unit consisting of a protein having a single definable sequence, or consisting of two or more proteins, each having a single definable sequence, which proteins interact to form a complex, the method comprising:

- (a) providing a plurality of DNA fragments consisting of fragments, each of which appears in a DNA sequence that encodes the single biological unit;
- (b) creating a library consisting of oligonucleotides from said plurality of DNA fragments, each said oligonucleotide comprising at least two of said fragments, said fragments being randomly ligated;
- (c) inserting each of said oligonucleotides from said library of oligonucleotides into an expression system;
- (d) causing the peptides encoded by said oligonucleotides to be expressed;
- (e) screening the expressed peptides for interaction with a ligand that interacts with a

discontinuous epitope of said single biological unit;

- (f) identifying any peptide which so interacts; and
- (g) producing any peptide so identified.

185 (New). A method of preparing a library of peptides that can be screened to find peptides that interact with ligands that interact with discontinuous epitopes of a single biological unit consisting of a protein having a single definable sequence, or consisting of two or more proteins, each having a single definable sequence, which proteins interact to form a complex, comprising:

- (a) providing a plurality of DNA fragments consisting of fragments, each of which appears in a DNA sequence that encodes the single biological unit;
- (b) creating a library consisting of oligonucleotides from said plurality of DNA fragments, each said oligonucleotide comprising at least two of said fragments, said fragments being randomly ligated;
- (c) inserting each of said oligonucleotides from said library of oligonucleotides into an expression system; and

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- (d) causing the peptides encoded by said
oligonucleotides to be expressed, thereby
preparing a library of peptides.